Claims

1. Device for administering xenon and/or a xenon-containing medium, in particular a xenon-containing gas mixture, to a patient, whereby the patient is connected to an inhalation system and to a cardio-pulmonary bypass system (CPB system), **characterized in that** the device comprises

a) at least one source (X) of xenon and/or of a xenon-containing medium,

b) at least one supply unit for xenon and/or for a xenon-containing medium in the inhalation system (V, 1, 1') and in the CPB system (M, 2, 2'),

c) at least one dosage unit (S) for administering xenon and/or a xenon-containing medium in the inhalation system (V, 1, 1') and in the CPB system, and

d) at least one analysis unit (S) for determining the xenon content in the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2').

2. Device according to claim 1, wherein the source (X) of xenon or of a xenon-containing medium is a source that yields gaseous xenon, optionally in a mixture with one or more other media, preferably gases.

3. Device according to claim 1 or 2, wherein means for connecting the inhalation system (V, 1, 1') and the CPB system (M, 2, 2'), via which a media exchange (9) can be carried out between the two systems, are provided.

4. Device according to one of the preceding claims 1 to 3, wherein at least one reprocessing unit (W), which is connected to or can be connected to the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2') and that is used for the recovery of xenon from the previously mentioned system or system, is provided.

5. Device according to one of the preceding claims 1 to 4, wherein in addition to the analysis unit (S) for determining the xenon content in the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2'), at least one additional analysis unit, which is used to determine a media concentration and/or another parameter, such as flow, pressure, temperature, etc., is provided.

6. Device according to one of the preceding claims 1 to 5, wherein the CPB system (M, 2, 2') is designed as a closed system.

7. Device according to one of the preceding claims 1 to 6, wherein the CPB system (M, 2, 2') has a CO_2 absorber, a CO_2 adsorber and/or a CO_2 filtering device, preferably a permeative CO_2 filtering device.

8. Process for the administration of xenon and/or a xenon-containing medium, in particular a xenon-containing gas mixture, to a patient, whereby the patient is connected to an inhalation system and a cardio-pulmonary bypass system (CPB system), wherein

a) the xenon content in the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2') is determined directly or indirectly, and

b) xenon and/or a xenon-containing medium is at least occasionally administered from a source (X) of xenon and/or of a xenon-containing medium in the inhalation system (V, 1, 1') and/or in the CPB system (M, 2, 2').

9. Process according to claim 8, wherein at least one additional medium, preferably a gas or gas mixture, is at least occasionally fed to the inhalation system (V, 1, 1') and/or to the CPB system (M, 2, 2').

10. Process according to claim 8 or 9, wherein in addition to the xenon content(s), additional media concentrations and/or parameters, such as flow, pressure,

temperature, etc., of the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2'), are detected.

11. Process according to one of the preceding claims 8 to 10, wherein the unconsumed xenon, contained in the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2'), is recovered (W).

12. Process according to one of the preceding claims 8 to 11, wherein in the administration of xenon and/or a xenon-containing medium in the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2'), the values in question cannot drop below a preset or presettable oxygen concentration in the inhalation system (V, 1, 1') and/or the CPB system (M, 2, 2').